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VALUE OF A SMALL PLOT OF GROUND TO THE LABORING MAN.

A STUDY OF THE FOOD RAISED BY OPERATIVES IN SOUTHERN COTTON-MILL TOWNS.

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CONTENTS.

	Page.		Page.
Profit and pleasure	1	The garden	4
The cotton-mill village	2	The poultry	8
Quantity and value of food raised by cotton-mill operatives	3	Pigs	8
		The family cow	9

A large acreage of land in the United States can be used for agricultural purposes which is not generally classed as farm land. This area includes the numberless backyards and small holdings of less than 3 acres within and close by cities and villages. Much of this land already is being used for raising food for home consumption, but more is lying idle. The importance of utilizing this land is obvious. The family raising its food gets it at cost, which, as will be shown later, represents only actual cash expenditures.

Thousands of dollars worth of vegetables are raised in cities and villages at very small cost. The work is done by members of the consumer's family, with no cash expenditures except for seed and fertilizer. The last census reported over one million cows not on farms. Many of these are family cows kept by town dwellers to furnish milk and butter. With cheap pasture available a cow may be kept at a profit. The census reports over one million hogs not on farms, which indicates that much pork is produced by village and city families for home consumption. The number of poultry flocks not on farms is not reported, but probably more families keep chickens than keep cows or swine. These data show that the idea of utilizing small plots of ground for raising food is not a new one and emphasize the possibilities yet unrealized. (See pl. 1.)

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This bulletin sets forth results obtained from small plots of ground by over 500 families living in Southern cotton-mill villages. The facts and figures gathered in the study of the utilization of these plots for producing food are presented as suggestive of what the industrial establishment can do for the welfare of its employees by locating where the cost of living may be kept down by the home production of food. They may also serve to give the village or city dweller information as to the possibilities of raising food on small plots of suitable available ground.[1]

It refers particularly to the small plots of ground which may be used by village or city dwellers for raising vegetables, fruit, poultry, and even hogs and milk. The ground should be located conveniently so that the family may do most of the work. It is difficult to conceive of a laboring man's family using its spare time to better advantage than in cultivating the home garden or caring for a small flock of poultry or the family cow. The most productive garden or the most profitable flock of poultry, however, is the result of good management and intelligent care. If pride is taken in the garden and study devoted to its management, it will be a pleasure to plan for it during the winter and care for it during the summer. The man who finds recreation in fishing knows just what bait is best for each kind of fish; knows just where the best fishing places are, and the season when he is most likely to make a big catch. The successful home gardener or poultryman makes a study of this form of recreation with the same kind of enthusiasm that animates the keen fisherman.

The local retail prices used in this study were considerably lower than the prices current in large cities and towns at the time the study was made, and only one-third to one-fourth of the present prices (1917). The comparative cheapness of produce in these villages may be attributed to the fact that most families raise enough for their own use and a little over, so that in season the "store prices" of most vegetables or fruits are influenced greatly by the prices at which the consumer can buy them from a neighbor.

THE COTTON-MILL VILLAGE.

Southern textile companies furnish houses for the cotton-mill employees. The mill buildings, surrounded by the operatives' houses and the few necessary stores and shop buildings constitute the mill

[1] United States Department of Agriculture bulletins, State experiment station bulletins, and farm papers give information pertaining to garden culture, the amount of land needed for a small flock of poultry or a family cow, and the kinds of feed to use. A talk with a neighbor who has had success with his garden or his poultry is suggested. He may be able to give some good information. Good seed catalogues also give certain information on garden vegetables.

village. (See pl. II.) The operatives pay a nominal rent for the use of the dwellings, rarely exceeding $1 a month per room. The average size of house is three to four rooms per family. The houses are built on separate lots, which vary considerably in size in the different villages. One-fourth of an acre is a fair average size. This extra space on the house lot is intended especially for garden or poultry uses. This organization of an industrial community is peculiar to cotton-mill villages. In addition to the land around the houses provided for gardens the company often sets apart a pasture immediately adjoining the mill village for the free pasturage of the operatives' cows.

Some mill owners offer other inducements to the operatives. One company has a demonstration garden of half an acre. An expert is employed to grow a great variety of vegetables, showing the best cultural methods for each variety. The plot is intended as a model in planning a garden and creates much local interest in gardening. Another mill owner has a pure-bred dairy bull, whose services are free to the operatives owning cows.

In a number of villages interest in gardening is stimulated by offering prizes for the best gardens. The scoring is based on general appearances. This has the general effect of cleaning up the village and encourages the growing of flowers as well as vegetables. The front yard is beautified along with the back yard (see Pl. III). In no village visited, however, were prizes offered on the quantity of vegetables raised in the garden. This logically might be the next step. The family raising the most vegetables naturally will tend to keep the surroundings of the home in good order and at the same time to be better off financially.

QUANTITY AND VALUE OF FOOD RAISED BY COTTON-MILL OPERATIVES.

A large number of families were visited in nine different mill villages in the western parts of North Carolina and South Carolina to gain an idea of the economies of the vegetable garden, the small poultry flock, and the family cow under village conditions. The survey method was used in collecting the information. Effort was made to avoid the unusual and to study plots representing average conditions.

Records were taken of 548 gardens, 165 poultry flocks, 74 cows, and 62 hogs. It is felt that the number of records of each enterprise is sufficient to arrive at a fair average of actual conditions. Some of the families fed their stock at a loss and others had poor returns from their gardens. The data thus represent the result of poor management as well as of good.

The operatives are almost exclusively native people of the South. Many of them were formerly farmers in western North Carolina and South Carolina who were drawn to the mills by the steady occupation they offered to the whole family. Their farming experience naturally aids them in the village gardening and in the proper feeding and care of the live stock.

THE GARDEN.

The most important of the small enterprises conducted on the lots is the garden. It furnishes throughout the summer a great variety of food which can be gathered fresh each day. With proper care and planning, a garden of average size in the regions studied will

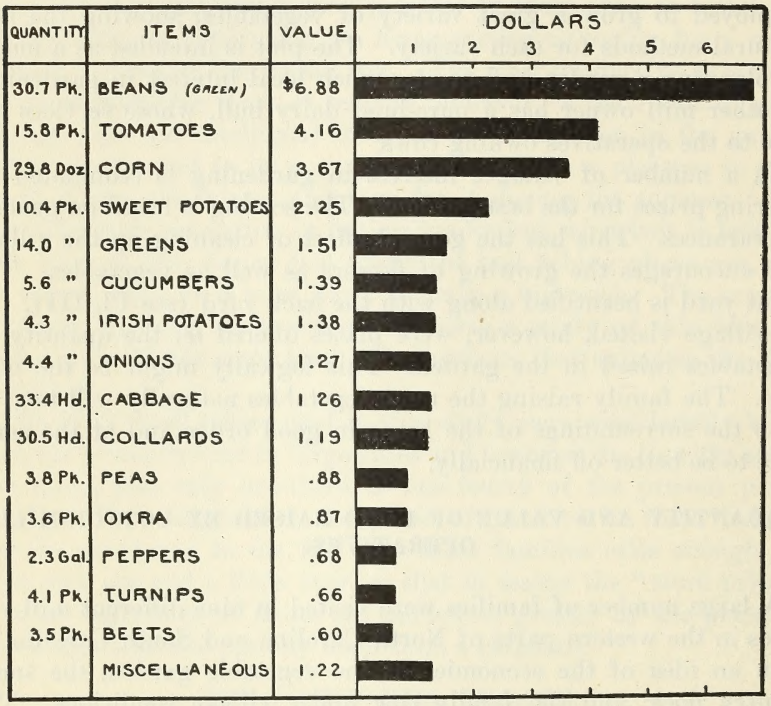


FIG. 1.—Comparison of the average value of vegetables raised on 548 gardens. The average size of these gardens is 723 square yards, or about one-seventh of an acre.

furnish fresh vegetables for six months during the year, and even longer if winter gardens are planted.

The average value of vegetables raised on the gardens visited was $29.87 (see fig. 1). This includes returns from some very poor gardens and some very good ones. In one of the villages, for instance, where a large number of families were visited, one-third of the gardens produced vegetables to the average value of $48, and

the other two-thirds produced on the average only $16 worth. The average good garden was only one-tenth larger in area and cost only one dollar more for labor, fertilizer, and seed than the average poor one.

SIZE OF GARDENS.

The average area devoted to gardens by all families visited is 723 square yards, or 0.15 of an acre. This area varies considerably, even in the same village, the size being dependent both on the area available and on the inclinations of the family. Some families do not begin their work in time to utilize all the land available, some care to raise only a few varieties of vegetables, and others think the returns are not worth the attention necessary. "We do not bother with much of a garden" is a common expression. A small poultry yard may take up a large part of the lot.

As would be expected, the value of vegetables raised is greater on the larger gardens, though the value of vegetables raised per square yard is less. The amount expended on the gardens and the variety of vegetables raised increase with the increase in area of garden.

The fact that the large gardens show the larger returns should not be taken to indicate that the small gardens all give low returns. It is found, for instance, that of the 144 families who have gardens of sizes between 300 and 499 square yards, 35 raise on an average nearly $50 worth of vegetables, which is considerably more than they pay for rent per year.

The value of vegetables sold is greater for the larger gardens, but at most the amount sold is comparatively small. The surplus vegetables raised generally find a ready market. It is a common practice in some villages for one to give to neighbors the small surplus raised or exchange it for other vegetables.

A very small quantity of the vegetables raised is canned for future use. It was found than on an average only 28 quarts were canned from the largest gardens, while the average number of quart cans of vegetables "put up" for all the families was but 22. The average number of those who canned was 37. A little more than one-third of the families did no canning. Beans and tomatoes often are raised in larger quantities than can be utilized for family purposes during the season and might be canned for use during the winter when fresh vegetables must be bought.

SIZE OF FAMILIES HAVING GARDENS.

The average number of persons per family, for all the families visited, in terms of adults, was 4.5,[1] boarders being included as members of the family. Arranging the records according to the size of the

[1] In giving the size of family in terms of adults, children 12 years of age and less are counted as one-half of an adult, and all persons older as adults.

family, it is found that the families of five persons and less averaged $26 worth of vegetables raised, and those of over five persons averaged $39 worth. The large families, however, have gardens one-third larger than the small families. The fact that only a small part of the vegetables raised are sold indicates that the vegetables are raised for home consumption. Thus the larger the family the greater the quantity of vegetables that must be raised. Hence it was found that the larger families either had larger gardens than the smaller families or cultivated their land more intensively.

VARIETY OF VEGETABLES GROWN.

Twenty-two kinds of vegetables were grown on these gardens, though no one garden was found which grew them all. An average of 9.5 kinds were grown per garden. The vegetables grown most commonly are those returning the most money, as shown in Plate I. Beans, tomatoes, and sweet corn are grown on nearly all the gardens. Peppers, cucumbers, beets, and greens[1] are grown on over three-fourths, and okra, onions, and peas on over half the gardens.

In one village a man with a garden 544 square yards in area planted 20 kinds of vegetables and raised $115 worth. In the same village another man had a garden of 650 square yards, planted 17 kinds, but raised only $21 worth. The former simply raised a much bigger crop per square yard than the other.

In order to see whether the variety of vegetables raised had any effect on the returns from the gardens, all the records of gardens, the sizes of which were over 500 square yards but less than 700, were classified by the number of kinds of vegetables grown. Those having 10 or more kinds were put in one group, and those having fewer in another group. The former group had on an average, for 71 gardens, averaging 577 square yards, 12 kinds of vegetables, the value of which was $33. In the other group were 64 gardens, averaging 591 square yards, raising 7 kinds to the value of $20. Thus the best gardens in this region grow more than 10 different vegetables. The best success on a limited area, however, involves careful planning, so as to have as much space as possible for each class of vegetables. The proper succession of vegetables must be known. Late vegetables may be planted between the rows of earlier vegetables, allowing the late crop to grow while the earlier ones are maturing. Thus successive crops may be obtained. Often three crops are taken from the same ground. Individual attention and knowledge of gardening are essential.

[1] Greens include mustard, lettuce, and turnip greens.

CASH EXPENDITURES ON GARDENS.

The average cash cost per garden was $3.54, distributed as follows:

Labor	$1.51
Seed	1.51
Fertilizer	.52
Total	3.54

This includes only the cash for hired labor, seed, and fertilizer. The labor expenditure is limited practically to the cost of having the garden plowed and harrowed for planting. Little or no labor is hired during the season, the planting and care of the garden being done by the family. The use of the land is not charged against the garden, as the rent paid for the use of the house includes the use of the lot, whether it is used for garden or other purposes. For gardens of the same size the returns are greatest where the expenditures are greatest. On these, however, the range of vegetables grown is also greater, indicating that those who spend more for labor, seed, and fertilizer also utilize their opportunities in other directions. The best gardeners have the seed-bed well prepared, purchase good seed, and apply fertilizer intelligently.

WINTER GARDENS.

Collards, a variety of kale, are grown in the fall and winter on about one-fourth of the gardens visited. This crop is mentioned here particularly because it does not compete with any other crop. In one village where 42 gardens grew collards and 45 did not the former averaged $9 worth of collards, and the average total value of vegetables raised was $34. The latter group grew no collards and the vegetables raised were valued at $24. The gardens were a little smaller in the first group. Families who relish this vegetable for greens will find it a profitable crop. Turnips, sown after the other vegetables are taken off, are often grown in the winter for greens.

FRUITS.

The average value of fruits raised for all the families visited was only $0.72, but the average for those who raised fruit was $3.20. Three-fourths of the families visited did not raise fruit of any kind. The fruit most commonly raised was the peach, with an occasional family having berries or apples. More fruit could be raised to advantage. The continual changing of tenants probably accounts for the small amount of fruit raised. Peaches, and even small fruit, must be set out a few years before returns are realized, and the tenant who has doubts of his remaining on his place for more than two years will not set out fruit for the benefit of some one else. The initiative

of the mill owners probably would be required to bring about the more general growing of peaches and small fruits in the villages.

POULTRY.

A large number of the families in these villages keep small flocks of poultry. Very little pure-bred stock was found, most of the flocks consisting of mixed breeds. The poultry houses were of a very temporary type, and inexpensive.

The average size of the 165 flocks from which records were taken was 13.2 fowls. The number of eggs used and sold averaged 86 dozen, valued at $19.35, and the number of fowls used and sold was 36, valued at $11.07, giving a total income of $30.42 per flock. The average expenditure for eggs, fowls, and wire bought was $1.16, and that for feed was $15.06, making a total expenditure of $16.22. The net return for these flocks thus was $14.20, or $1.08 per fowl. Labor cost and interest on investment in buildings and fowls are not charged against the flock. The labor was performed by the family, and the interest on the investment is negligible. The feed bought consists largely of cracked corn and other cereals. It is bought ready mixed, in peck and bushel lots. Table scraps are generally fed to the poultry, which reduces the feed bill. The value of the family table scraps is not included in the feed cost. Feeding to the poultry is a very economical way of disposing of the table wastes. Twelve flocks were fed wholly on table and garden wastes.

The flocks are penned the greater part of the year to keep them from running on the gardens. Thus, unlike the average farm flock, they are not able to find any of their feed.

The family in these villages which keeps a small flock of good fowls, feeds them carefully, and keeps them fenced in finds them profitable.

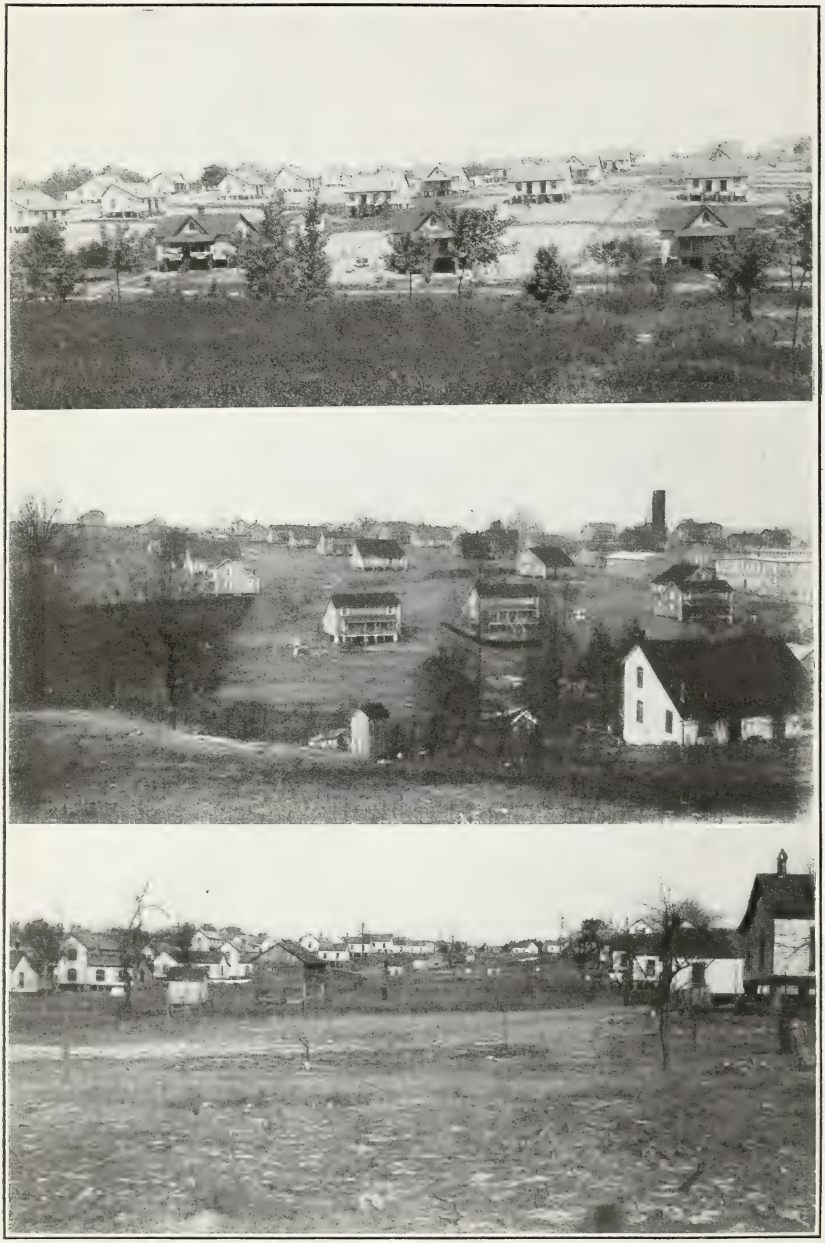
PIGS.

In most of the mill towns pigs are not allowed within the village proper for sanitary reasons. Some families have the pen located just outside the village and the necessity of carrying the feed a long distance is a discouraging factor.

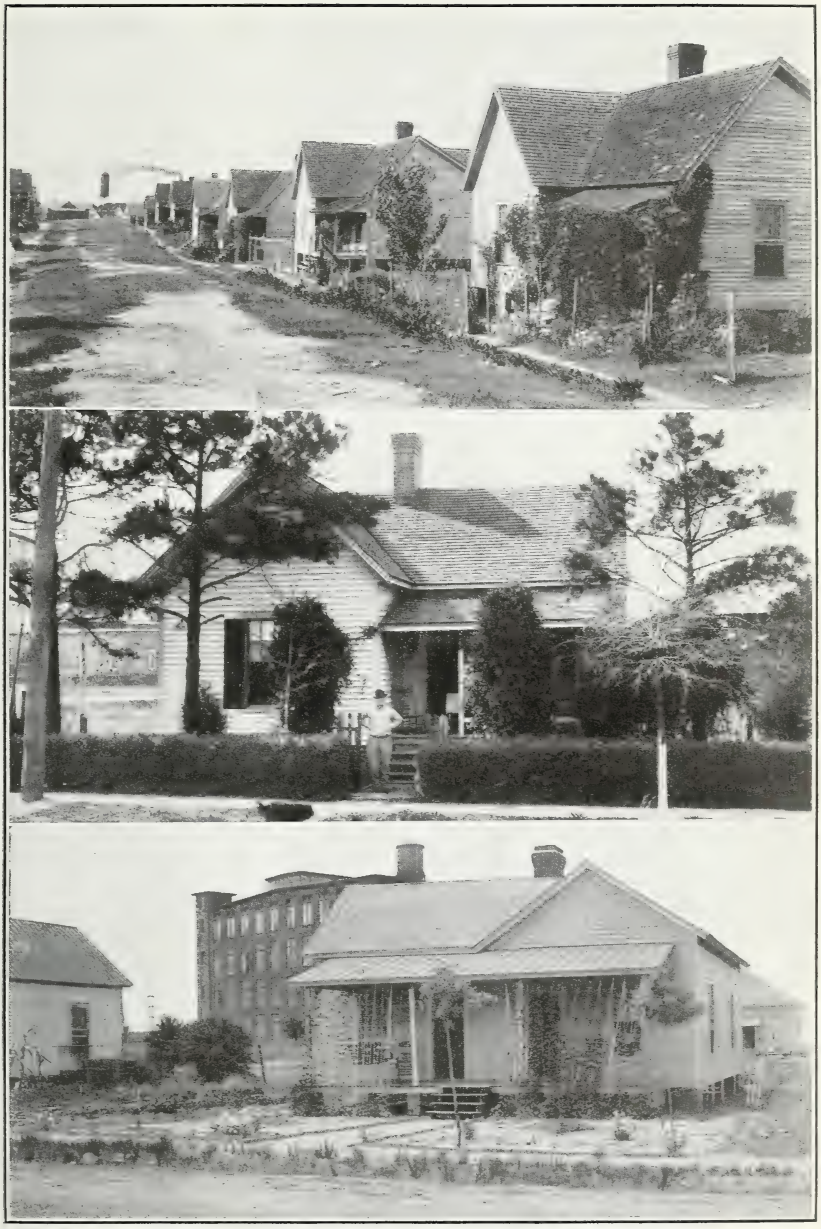
Records were taken of 62 hogs that had been fattened. The average purchase price of the pigs was $6.34, and the average live weight at killing time 270 pounds—worth $24.30 at $0.09 a pound. The cost of feed amounted to $12.12, leaving a net return of $5.84 after deducting the purchase price.

The feed bought consisted largely of shorts, corn, mill feed, kitchen scraps bought from neighbors, and a little buttermilk. The money

THE UTILIZED AND THE WASTED LOT CONTRASTED.



GENERAL VIEWS OF VILLAGES, SHOWING SPACE AVAILABLE FOR EACH FAMILY.



THE FRONT YARD IS BEAUTIFUL AS WELL AS THE BACK YARD.

paid for purchased kitchen scraps was $2.57 per hog. The value of the home kitchen wastes fed was not included in the feed cost. The feeding period extended over an average of ten months. These data indicate that it is profitable for the mill operative to fatten a pig when all feed does not have to be bought. Some of the families fatten only one hog and buy little feed, depending largely on their kitchen wastes. Other families fatten two or more pigs and rely more on materials bought for feed.

THE FAMILY COW.

In most of the cotton-mill villages the operative is encouraged to keep a family cow. Pastures adjoining the village proper are available for the free use of the families having cows. These pastures are fully utilized. In some instances the mill company has put up substantial stalls for housing the cows, and in other villages the operatives build cheap, temporary structures for this purpose.

The cows invariably are bought in the immediate neighborhood from farmers or neighbors. The quality of the cows is good. It is not uncommon for the operative to buy his cow on the basis of actual production at the beginning of the lactation period. The cow is bought as a "two, three, or four gallon" cow.

The practice in making butter in this regon is to churn the whole milk. The buttermilk, of which there is a quantity nearly equal to the quantity of whole milk produced, is used for drinking purposes. The large families use all the buttermilk produced, and the smaller families sell their surplus to neighbors. It commonly sells at 10 cents a gallon.

Records of the cost of feeding and of the value of buttermilk and butter produced were obtained from 74 cows. The data are given in the following table:

Record of 74 family cows owned by operatives in cotton-mill villages of the western parts of North Carolina and South Carolina.

[Value per cow, $46.]

Feed and yield per cow.	Quantity.	Value.
Feed:	*Pounds.*	
Roughage (pea-vine hay, alfalfa hay, corn stover)	1,000	$9.88
Cottonseed hulls	4,535	33.60
Cottonseed meal	1,700	32.04
Shorts	140	2.20
Mill feed	170	2.77
Total		80.49
Yield:		
Buttermilk, gallons	605	60.50
Butter, pounds	270	59.40
Total		119.90

The records are for the year 1915. The cows have the run of free, common pasture all summer, but the pastures are kept closely cropped.

The average value of the cows as estimated by the families was $46. The average cost of feed per cow was $80.49 a year. The average returns were $119.90. These comparatively high returns are attributable to the high value of the buttermilk, which is worth a little more than the butter. The butter alone would not pay for the feed.

It is evident that where the families in these villages do all the work, and the use of the pasture and stable is free, it may be more profitable for large families to have their own cow than to buy milk and butter for family use.

PUBLICATIONS OF THE DEPARTMENT OF AGRICULTURE RELATING TO THE SUBJECT OF THIS BULLETIN.

AVAILABLE FOR FREE DISTRIBUTION BY THE DEPARTMENT OF AGRICULTURE.

Standard Varieties of Chickens. (Farmers' Bulletin 51.)
Home Fruit Garden. (Farmers' Bulletin 154.)
Pig Management. (Farmers' Bulletin 205.)
Okra: Its Culture and Uses. (Farmers' Bulletin 232.)
Cucumbers. (Farmers' Bulletin 254.)
Home Vegetable Garden. (Farmers' Bulletin 255.)
Poultry Management. (Farmers' Bulletin 287.)
Beans. (Farmers' Bulletin 289.)
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Care of Milk and Its Use in the Home. (Farmers' Bulletin 413.)
Cabbage. (Farmers' Bulletin 433.)
Hog Houses. (Farmers' Bulletin 438.)
Grape Propagation, Pruning, and Training. (Farmers' Bulletin 471.)
Hints to Poultry Raisers. (Farmers' Bulletin 528.)
Important Poultry Diseases. (Farmers' Bulletin 530.)
Farm Buttermaking. (Farmers' Bulletin 541.)
Boys' and Girls' Poultry Clubs. (Farmers' Bulletin 562.)
Boys' Pig Clubs. (Farmers' Bulletin 566.)
Poultry House Construction. (Farmers' Bulletin 574.)
Natural and Artificial Incubation of Hens' Eggs. (Farmers' Bulletin 585.)
Clean Milk: Production and Handling. (Farmers' Bulletin 602.)
Natural and Artificial Brooding of Chickens. (Farmers' Bulletin 624.)
Home Garden in the South. (Farmers' Bulletin 647.)
Duck Raising. (Farmers' Bulletin 697.)
Goose Raising. (Farmers' Bulletin 767.)
Plant a Garden. (States Relations Service, N. R. 1.)
Seeds and Plants for the Home Garden. (States Relations Service, N. R. 2.)
Vegetables to Grow and How to Grow Them. (States Relations Service, N. R. 3.)
Conveniences for Handling the Farm Cow and Her Products. (Secretary's Special, 1914.)
Do You Keep a Cow? (Secretary's Special, 1914.)
The Feeding and Care of Dairy Calves. (Secretary's Special, 1914.)
Feeding the Farm Cow in the South. (Secretary's Special, 1914.)
Making Farm Butter in the South. (Secretary's Special, 1914.)
The Production and Care of Milk and Cream. (Secretary's Special, 1914.)
How Southern Farmers May Get a Start in Pig Raising. (Secretary's Special, 1914.)

FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE.

Asparagus Culture. (Farmers' Bulletin 61.) Price, 5 cents.
Strawberries. (Farmers' Bulletin 198.) Price, 5 cents.
Raspberries. (Farmers' Bulletin 213.) Price, 5 cents.
Tomatoes. (Farmers' Bulletin 220.) Price, 5 cents.
Celery. (Farmers' Bulletin 282.) Price, 5 cents.
Suggestions on Poultry Raising for the Southern Farmer. (Secretary's Special.) Price, 5 cents.
Hog Raising in the South. (Secretary's Circular 30.) Price, 5 cents.
A Study in the Cost of Producing Milk on Four Dairy Farms, Located in Wisconsin, Michigan, Pennsylvania, and North Carolina. (Department Bulletin 501.) Price, 5 cents.

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